



RECEIPT

PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Nir N. Shavit et al.

Title: MAINTAINING A DOUBLE-ENDED QUEUE AS A LINKED-LIST  
WITH SENTINEL NODES AND DELETE FLAGS WITH CONCURRENT  
NON-BLOCKING INSERT AND REMOVE OPERATIONS USING A  
DOUBLE COMPARE-AND-SWAP PRIMITIVE

Application No.: 09/547,290

Filed: April 11, 2000

Examiner: Unknown

Group Art Unit: 2756

Atty. Docket No.: 1004-4664

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June 26, 2000

Office of Initial Patent Examination  
Customer Service Center  
Assistant Commissioner for Patents  
Washington, D.C. 20231

## PETITION FOR CORRECTED FILING RECEIPT

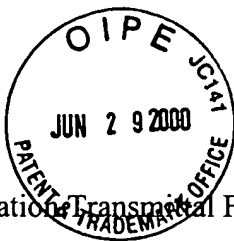
Dear Sir:

Applicants hereby petition the Commissioner of Patents and Trademarks to correct the  
Official Filing Receipt for the above-identified patent application as follows:

- ☐ Correct the Filing Date
- ☒ Correct Inventor Name
- ☐ Correct Title
- ☐ Correct information referencing related case
- ☐ Correct Attorney Docket Number
- ☐ Other: \_\_\_\_\_

This Petition is submitted for the following reasons:

The Inventor's Name should read as follows: Guy L. Steele Jr. (the middle initial was  
incorrect) as evidenced by the Declaration For Patent Application that was filed together with the



PATENT

Application Transmittal Form on April 11, 2000. Therefore, it is respectfully requested that a corrected Filing Receipt be issued.

Attached is a copy of the Filing Receipt having the above-described error(s) and with corrections noted thereon in red ink, as well as the Declaration for Patent Application and Transmittal Letter. Please issue a corrected Filing Receipt.

- ☒ As an above-described error is attributable to the Office, no fee is believed necessary. Nonetheless, if a fee is required, the Commissioner is hereby authorized to charge the fee required for this correction to Deposit Account No. 50-0631.
- ☐ As the above-described error(s) was (were) NOT attributable to the Office, the Commissioner is hereby authorized to charge any fees which may be required for this correction to Deposit Account No. 50-0631.

If this request does not lead to the correction of the Filing Receipt, please contact the Applicant's attorney at number indicated below.

Respectfully submitted,

David W. O'Brien, Reg. No. 40,107  
Attorney for Applicant(s)  
(512) 347-9030  
(512) 347-9031 (fax)

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**FILING RECEIPT**



\*OC00000005179446\*



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: ASSISTANT SECRETARY AND  
COMMISSIONER OF PATENT AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/547,290	04/11/2000	2756	822	1004-4664	10	23	4

022120  
ZAGORIN O'BRIEN & GRAHAM LLP  
1120 SOUTH CAPITAL OF TEXAS HWY  
BUILDING 3 SUITE 208  
AUSTIN, TX 78746

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ZAGORIN O'BRIEN & GRAHAM, L.L.P.

**JUN 20 2000**

Date Mailed: 06/15/2000

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the PTO processes the reply to the Notice, the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).**

**Applicant(s)**

Nir N. Shavit, Cambridge, MA ;  
Paul A. Martin, Arlington, MA ;  
Guy I. Steele JR., Lexington, MA ;  
*Guy L. Steele Jr.*

Action(s) docketed by: *psj* on *6/20/00*  
*File completed*

**Continuing Data as Claimed by Applicant**

THIS APPLN CLAIMS BENEFIT OF 60/177,090 01/20/2000

Next action(s):

**Foreign Applications**

Due: \_\_\_\_\_

Due: \_\_\_\_\_

Due: \_\_\_\_\_

Due: \_\_\_\_\_

If Required, Foreign Filing License Granted 06/15/2000

Attorney(s): *DW* Client letter? ☒ Yes ☐ No

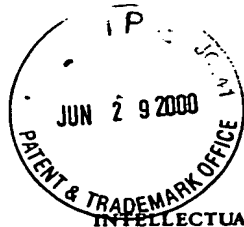
**Title**

Maintaining a double-ended queue as a linked-list with sentinel nodes and delete flags with concurrent non-blocking insert and remove operations using a double compare-and-swap primitive

**Preliminary Class**

709

**COPY**



LAW OFFICES OF  
**ZAGORIN, O'BRIEN & GRAHAM, L.L.P.**  
1120 SOUTH CAPITAL OF TEXAS HWY., BLDG. 3, SUITE 208  
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(512) 347-9030 (PHONE)  
(512) 347-9031 (FAX)

INTERNET: [www.IP-Counsel.com](http://www.IP-Counsel.com)

**COPY**

April 11, 2000

Box Patent Application  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Attorney Docket No.: 1004-4664

Transmitted herewith for filing is a patent application as follows:

Inventor(s): Nir N. Shavit, Paul A. Martin, and Guy L. Steele Jr.  
Title: Maintaining a Double-Ended Queue as a Linked-List with Sentinel Nodes and Delete Flags with Concurrent Non-Blocking Insert and Remove Operations Using a Double Compare-and-Swap Primitive

Enclosed are:

- ☒ 33 Pages of Specification (including Written Description, Claims and Abstract)  
☒ 10 Sheets of Drawings, ☒ Formal / ☐ Informal  
☒ Declaration for Patent Application (3 pages), ☒ Executed / ☐ Unexecuted  
☒ Assignment of the Invention (3 pages, including Cover Sheet)  
☐ Information Disclosure Statement (\_\_\_\_ pages)  
☐ with Form(s) PTO 1449 (\_\_\_\_ page(s)) and copies of \_\_\_\_ reference(s)  
☒ Other: Check in the amount of \$862.00  
☒ This Transmittal Letter (in duplicate) ☒ Return Postcard

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CLAIMS AS FILED

	Number Filed	Number Extra	Rate	Fee
Basic Fee =				690.00
Total Claims	23 - 20	= 3	x \$18.00 =	54.00
Independent Claims	4 - 3	= 1	x \$78.00 =	78.00
Multiple Dependent Claims (if any) - \$260.00 fee				0.00
Other: Fee for Recordation of Assignment				40.00
<b>TOTAL FILING FEE</b>				<b>\$ 862.00</b>

- ☒ A check is enclosed for the Total Filing Fee shown above.  
☐ Please charge the Total Filing Fee shown above to Deposit Account 50-0631.  
☒ The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. § 1.16 or 1.17 that may be required during the pendency of this application, and to similarly credit any overpayment, to Deposit Account 50-0631.

EXPRESS MAIL LABEL NO.:

EL151293354US

Respectfully submitted,

David W. O'Brien, Reg. No. 40,107  
Attorney for Applicant(s)  
(512) 347-9030  
(512) 347-9031 (fax)

**DECLARATION FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below adjacent to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of subject matter (process, machine, manufacture, or composition of matter, or an improvement thereof) which is claimed and for which a patent is sought by way of the application entitled

**MAINTAINING A DOUBLE-ENDED QUEUE AS A LINKED LIST WITH  
SENTINEL NODES AND DELETE FLAGS WITH CONCURRENT NON-  
BLOCKING INSERT AND REMOVE OPERATIONS USING A DOUBLE  
COMPARE-AND-SWAP PRIMITIVE**

which (check) ☒ is attached hereto.  
☐ and is amended by the Preliminary Amendment attached hereto.  
☐ was filed on \_\_\_\_\_ as Application Serial No. \_\_\_\_\_  
☐ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information, which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

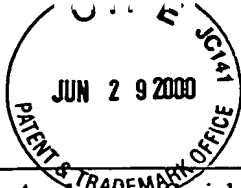
I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
Number	Country	Day/Month/Year Filed	Yes	No
N/A				

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below:

Provisional Application Number	Filing Date
60/177,090	January 20, 2000

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information, which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56, which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:



Application Serial No.	Filing Date	Status (patented, pending, abandoned)
N/A		

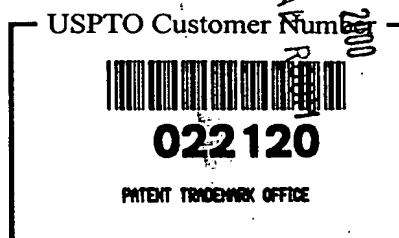
I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith:

Mark Zagorin (36,067); Andrew C. Graham (36,531); David W. O'Brien (40,107);  
Kenneth Olsen (26,493); Timothy J. Crean (37,116); Robert S. Hauser (37,847);  
Joseph T. FitzGerald (33,881); Alexander E. Silverman (37,940); Christine S. Lam (37,489);  
Anirra Rakshpal Gupta (38,275); Sean Patrick Lewis (43,798); and  
Michael J. Schallop (44,319).

Please direct all correspondence concerning this application to the USPTO Customer Number provided, or otherwise to the individual and/or firm named below:

Customer Number 22120  
**ZAGORIN, O'BRIEN & GRAHAM, L.L.P.**  
1120 S. CAPITAL OF TEXAS HWY.  
BUILDING 3, SUITE 208  
AUSTIN, TX 78746

Telephone: (512) 347-9030  
Facsimile: (512) 347-9031



I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole (or first joint) inventor: Nir N. Shavit

Inventor's Signature: [Signature]  
Residence: Cambridge, MA  
Post Office Address: 153 Upland Road  
Cambridge, MA 02140

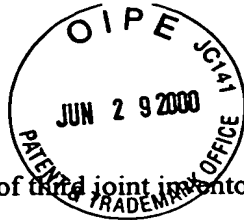
Date: 4/5/00  
Citizenship: Israel

Full name of second joint inventor: Paul A. Martin

Inventor's Signature: [Signature]  
Residence: Arlington, MA  
Post Office Address: 70 Ronald Road  
Arlington, MA 02474

Date: 4/5/00  
Citizenship: USA

COPY



Attorney Docket No.: 1004-4664

Full name of the joint inventor: Guy L. Steele, Jr.

Inventor's Signature: *Guy L. Steele, Jr.*  
Residence: Lexington, MA  
Post Office Address: 9 Lantern Lane  
Lexington, MA 02421

Date: 4/5/00  
Citizenship: USA

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Bib Data Sheet

**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

<b>SERIAL NUMBER</b> 09/547,290	<b>FILING DATE</b> 04/11/2000 <b>RULE</b> —	<b>CLASS</b> 709	<b>GROUP ART UNIT</b> 2758 2126	<b>ATTORNEY DOCKET NO.</b> 1004-4664
<b>APPLICANTS</b> Nir N. Shavit, Cambridge, MA ; Paul A. Martin, Arlington, MA ; Guy L. Steele JR., Lexington, MA ;				
<b>** CONTINUING DATA *****</b> THIS APPLN CLAIMS BENEFIT OF 60/177,090 01/20/2000 YES <i>ms</i>				
<b>** FOREIGN APPLICATIONS *****</b> NONE <i>ms</i>				
<b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> ** 06/15/2000 —				
Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after met Verified and <i>for</i> Acknowledged Examiner's Signature Initials		<b>STATE OR COUNTRY</b> MA	<b>SHEETS DRAWING</b> 10	<b>TOTAL CLAIMS</b> 23
				<b>INDEPENDENT CLAIMS</b> 4
<b>ADDRESS</b> 022120				
<b>TITLE</b> Maintaining a double-ended queue as a linked-list with sentinel nodes and delete flags with concurrent non-blocking insert and remove operations using a double compare-and-swap primitive				
<b>FILING FEE RECEIVED</b> 822	<b>FEES:</b> Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	